

New claims:

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8. A piezoelectric actuator, comprising a multilayer structure of piezoelectric plies; internal electrodes and external electrodes, said internal electrodes being arranged between said piezoelectric plies and having a lateral contacting in alternate direction of said internal electrodes with said external electrodes having two different polarities, two consecutive internal electrodes having a same polarity always comprising one internal electrode always having the other polarity between them and having a common contact point with their assigned external electrode, one of the two internal electrodes having the same polarity passing all the way through the piezoelectric actuator from a side of its contacting with said external electrode to an opposite side, the other internal electrode having the same polarity always terminating with clearance on a side of the piezoelectric actuator opposite to its contacting, the internal electrode passing all the way through the piezoelectric actuator terminating in a region of the piezoelectric actuator that is bridged over to prevent a short circuit of said external electrode arranged there.

9. A piezoelectric actuator as defined in claim 8; and further comprising an insulation layer applied in a region in which said internal electrode extended from a non-contacted side of the end terminates.

10. A piezoelectric actuator as defined in claim 8, wherein said external electrodes are composed of an electrically conductive material selected from the group consisting of a metal strip, a screen, and a net.

11. A piezoelectric actuator as defined in claim 8, wherein said external electrodes are composed of wave electrodes that bridge over the other internal electrode extended to an end of the piezoelectric ply and not to be contacted, at a specific distance in a shape of a wave.

12. A piezoelectric actuator as defined in claim 8, wherein said multilayer structure of piezoelectric plies is provided with an electrically insulating ceramic plate at each end of said piezoelectric plies.

13. A piezoelectric actuator as defined in claim 8, wherein said piezoelectric actuator is formed so that it is usable to actuate a mechanical component.

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14. A piezoelectric actuator as defined in claim 8, wherein said piezoelectric actuator is formed as a valve.

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